

$$\frac{1}{x-1} + \frac{1}{x} \geq 0$$

C.F

$$\frac{1}{x-1} + \frac{1}{x} \geq 0$$

$$\frac{-1x + x - 1}{x(x-1)} \geq 0$$

$$\frac{2x-1}{x(x-1)} \geq 0$$

$$2x-1 = +\frac{1}{2}$$

$$x = 0$$

$$x-1=0$$

$$x=+1$$

	0	1/2	1	
(2x-1)	-	-	0	+
x	-	0	+	+
(x-1)	-	-	-	0
	-	0	-	+

$0 < x \leq \frac{1}{2} \vee x > +1$   
 $]0; \frac{1}{2}] \cup ]1; +\infty[$

$$5x^2 - 8 - 6x + 3x^3 \leq 0$$

$$5x^2 - 8 - 6x + 3x^3 \leq 0 \quad (x+1)(3x^2+2x-8) \leq 0$$

	3	5	-6	-8
-1		-3	-2	+8
	3	2	-8	0

$$x+1=0 \rightarrow x = -1$$

$$3x^2+2x-8=0$$

$$x_{1,2} = \frac{-2 \pm \sqrt{4+96}}{6} = \begin{cases} \frac{-2+10}{6} = \frac{8}{6} = \frac{4}{3} \\ \frac{-2-10}{6} = -2 \end{cases}$$

	-2	-1	4/3	
3x-4	-	-	-	0
x+2	-	0	+	+
x+1	-	-	0	+
	-	+	-	+

$x \leq -2 \vee -1 \leq x \leq \frac{4}{3}$   
 $]-\infty; -2] \cup [-1; \frac{4}{3}]$

$$\frac{3}{x} \geq \frac{x-2}{2x^2}$$

$$\frac{3}{x} \geq \frac{x-2}{2x^2}$$

$$\frac{3}{x} - \frac{x-2}{2x^2} \geq 0$$

$$\frac{3(2x) - (x-2)}{2x^2} \geq 0$$

$$\frac{6x - x + 2}{2x^2} \geq 0$$

$$\frac{5x + 2}{2x^2} \geq 0$$

$$5x + 2 = 0 \rightarrow 5x = -2 \rightarrow x = -\frac{2}{5}$$

$$2x^2 = 0$$

	-2/5	0	→
5x+2	-	+	+
2x <sup>2</sup>	+	+	+
	-	+	+

$$-\frac{2}{5} \leq x < 0 \vee x > 0$$

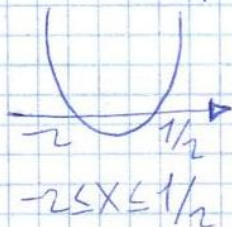
$$\left[-\frac{2}{5}; 0[ \cup \right] 0; +\infty[$$

$$\begin{cases} 2x(x+3) \leq 2(3x+1) - 3x \\ x^3 + 3x > 0 \end{cases}$$

$$1^\circ) \quad 2x^2 + 6x \leq 6x + 2 - 3x$$

$$2x^2 + 3x - 2 \leq 0$$

$$x_{1,2} = \frac{-3 \pm \sqrt{9+16}}{4} = \begin{cases} \frac{-3+5}{4} = \frac{1}{2} \\ \frac{-3-5}{4} = -2 \end{cases}$$



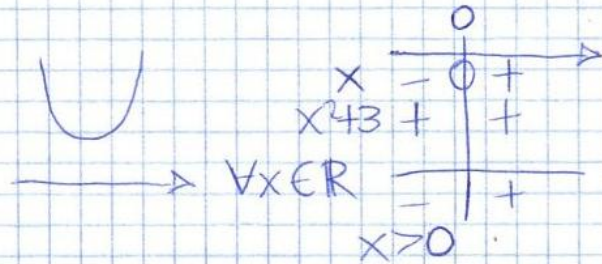


$$2^{\circ}D \quad x^3 + 3x > 0$$

$$x(x^2 + 3) > 0$$

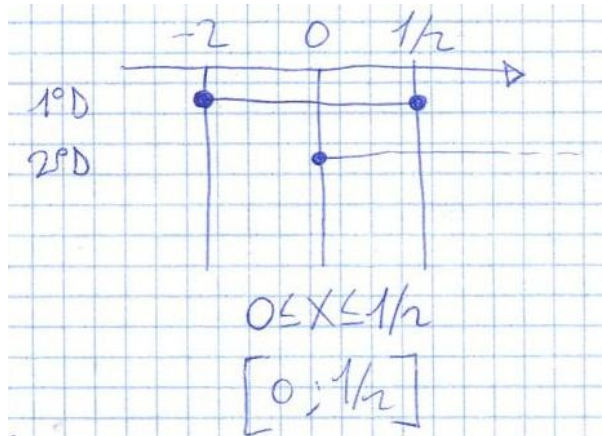
$$x = 0$$

$$x^2 + 3 = 0 \rightarrow x = \emptyset$$



Mettendo a sistema le soluzioni delle due disequazioni che formano il sistema si ottiene:

$$\begin{cases} -2 \leq x \leq 1/2 \\ x > 0 \end{cases}$$



$$\begin{cases} 9 - 2x > 0 \\ (2 - x)^2 \geq 4 \end{cases}$$

$$1^{\circ}D \quad 9 - 2x > 0$$

$$2x - 9 < 0$$

$$2x < 9$$

$$x < \frac{9}{2}$$

$$(2-x)^2 \geq 4$$

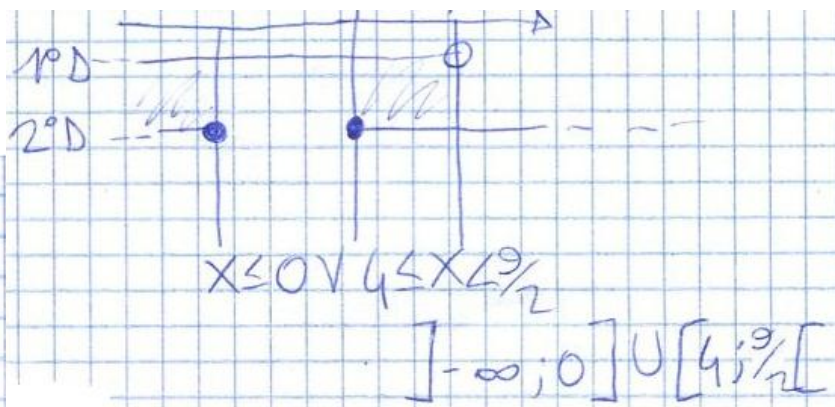
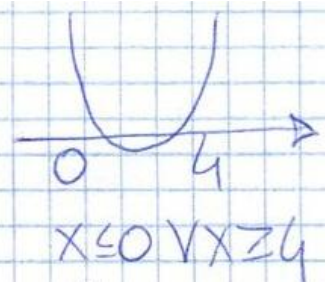
$$4 + x^2 - 4x - 4 \geq 0$$

$$x^2 - 4x \geq 0$$

$$x(x-4) \geq 0$$

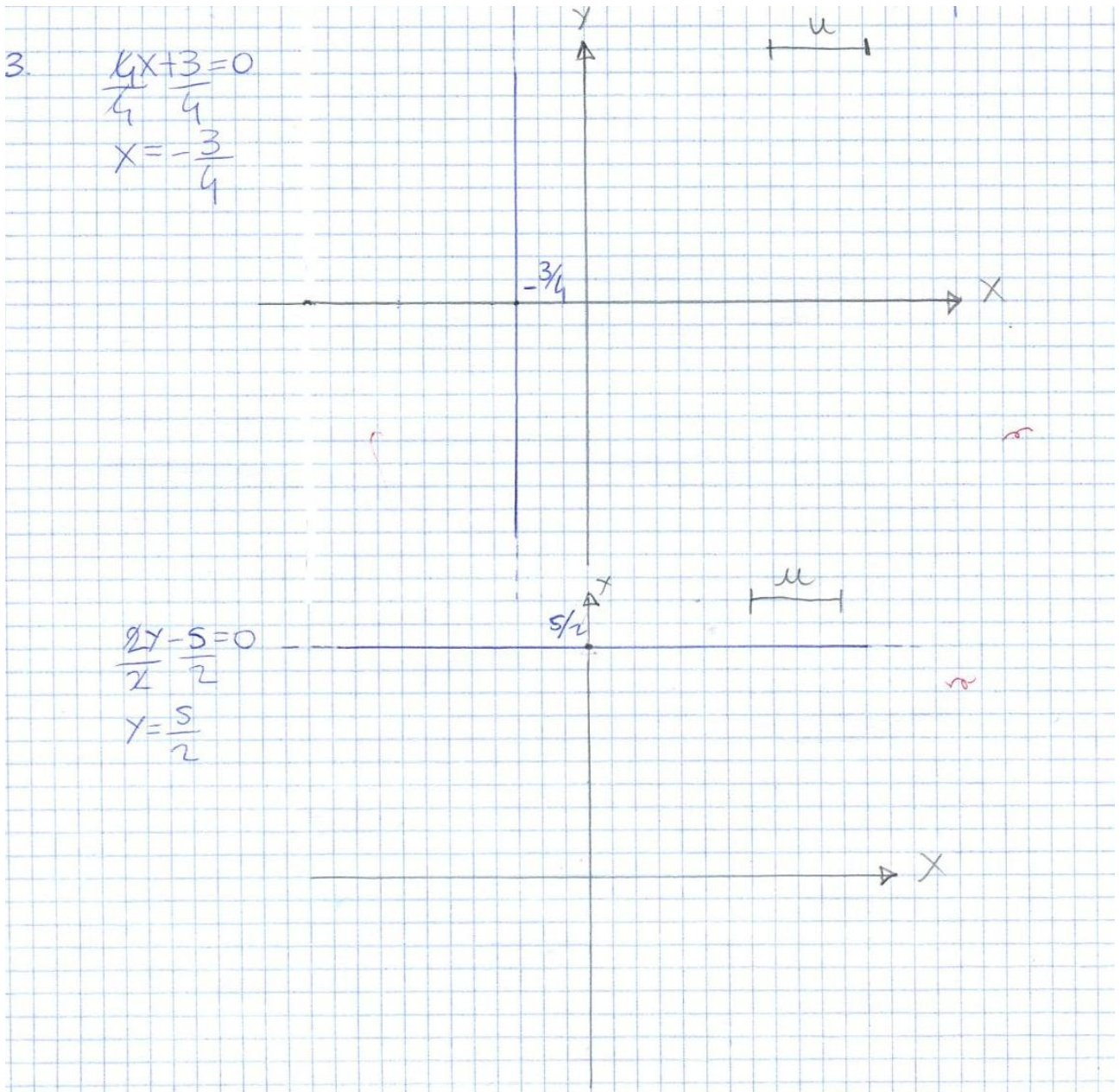
$$x = 0$$

$$x - 4 = 0 \rightarrow x = 4$$

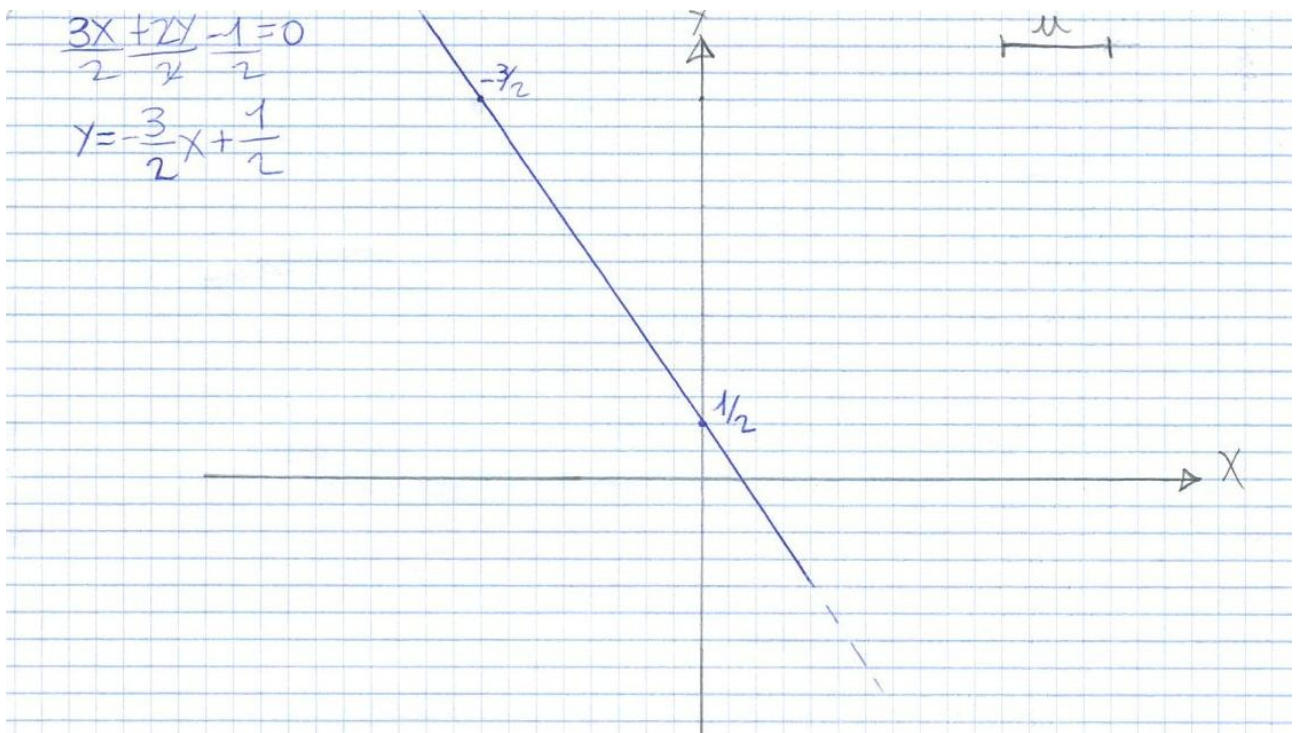


$$\begin{cases} x < \frac{9}{2} \\ x \leq 0 \vee x \geq 4 \end{cases}$$

3 -Rappresenta le rette di equazione  $4x+3=0$   $2y-5=0$   $3x+2y-1=0$  su un piano cartesiano monometrico con l'unità corrispondente a 4 quadretti







4 - Determina l'equazione della retta passante per i punti  $A\left(\frac{1}{2}; -\frac{4}{3}\right)$   $B\left(-3; -\frac{5}{2}\right)$

$$y = mx + q$$

$$m = \frac{y_A - y_B}{x_A - x_B} = \frac{-4/3 + 5/2}{1/2 + 3} = \frac{7/6}{7/2} = \frac{7/6 \cdot 2}{7/2 \cdot 2} = \frac{1}{3}$$

$$y = \frac{1}{3}x + q$$

$$-\frac{4}{3} = \frac{1}{3} \begin{pmatrix} 1 \\ 2 \end{pmatrix}$$

$$-\frac{4}{3} = \frac{1}{6}$$

$$-\frac{4}{3} - \frac{1}{6} = \frac{-8-1}{6} = \frac{-9}{6} = -\frac{3}{2}$$

$$y = \frac{1}{3}x - \frac{3}{2}$$

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